

"AMERICA'S NEXT STEP IN SPACE"

by
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The Space Shuttle Columbia's fourth successful flight brought to a close the Shuttle's flight test program. Future flights will be of an operational nature, though, of course, we will learn more about the Shuttle each time we fly. Nothing more graphically symbolizes the transition to an operational Shuttle system than the recent arrival at Cape Canaveral of Columbia's sister ship, the Challenger. Within two and one-half years, Atlantis and Discovery will join the orbiter fleet and the United States will have a space transportation system undreamed of at the time John Glenn circled the earth.

With the Shuttle program well on its way to maturity, it is timely for NASA, and the Nation, to consider what is the next appropriate step in space. For a variety of reasons, discussed below, I believe the next step should be a manned space station. The station would be tended by Shuttle, in permanent orbit around the Earth and capable of meeting specific scientific and operational requirements.

Maintain U.S. Leadership in Space

Some twenty years ago, a Russian cosmonaut named Yuri Gagarin rocketed into space to become the first man to orbit the Earth.

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Followed shortly by the American Mercury astronauts, Gagarin's flight signaled the beginning of a new human activity: space flight.

Challenged by the Soviet success, the United States embarked upon a bold, ambitious plan of space exploration. Few enterprises have succeeded so well. Only American astronauts have explored the Moon. Only an American scientific laboratory is functioning on the surface of Mars. Only American spacecraft have pierced the asteroid belt to survey the outer planets. And back here on Earth, America has led the way to an era when communications, meteorological and remote sensing satellites have become a routine part of life.

Today, man's presence in space is represented by the Space Shuttle and by the Soviet Union's Salyut series space station. Manned space flight has become almost routine.

The benefits of such flight are substantial. New technologies are developed. Scientific knowledge is increased. New industries are created. National security is enhanced. Pride in country and prestige around the world are realized. All of these benefits derive from manned space flight, most recently -- for us -- from the Space Shuttle.

The Space Shuttle is truly an impressive vehicle, providing the United States with ready and continuing access to space. Only America has such a versatile space transportation system. But the Soviets are not standing still. The launch this April of Salyut 7,

a space station of considerable sophistication, demonstrates that the Soviet Union is challenging -- and capable of challenging -- American leadership in space. The first Salyut flew in 1971. Throughout the 1970's the Salyut series of spacecraft provided the Russians with a space station that produced scientific knowledge of considerable civil and military value. Salyut 7's value is both symbolic and substantive. It is a reminder of Soviet technological prowess and a demonstration of a sustained commitment to manned space flight.

To maintain the position of leadership the Space Shuttle still provides to the United States, new goals must be set, new projects begun. The Shuttle alone is not sufficient to retain our position of leadership in the 1990's, a point the New York Times alluded to in an editorial last March.

The program that will maintain an edge of superiority for the United States in space is a manned space station, permanently orbiting the Earth. A program of this importance would challenge our ingenuity. It would fulfill the potential of the Space Shuttle (the orbiters were designed to shuttle to and from a space station) and provide unparalleled opportunities for a variety of space-based operations and scientific research.

Stimulate Development of Advanced Technology

Advanced technology is a key element of our nation's economic vitality. Space flight is an important driver of such technology. Properly

funded, a difficult, focused space project can create major advances in technologies across many disciplines. Benefits then accrue to every sector of society. The Apollo program is a good example.

A space station would bring about similar results. It would serve to harness our existing scientific and engineering resources. It would challenge both NASA and her industrial partners to reach for new ideas and new technologies.

Enable Private Sector to Further Exploit Space Environment

Worldwide communications are now dependent upon space-based commercial systems. In a period of less than twenty years, the private sector -- after initial research and development of communications satellites by NASA -- has invested heavily in space and established a thriving business. Space has been profitable for the communications industry, and for the consumer who enjoys a highly capable, reliable system at a greatly reduced cost.

A space station would enable the private sector to again exploit the environment of space. One area that holds much promise is "materials processing," the manufacturing of specialized highly desirable materials in the unique micro-gravity environment of space.

NASA has already invested in this promising field as has Japan and West Germany. So too has the private sector. With testing and evaluation in the Shuttle now underway, materials processing in space could evolve into a major manufacturing enterprise. A space station would enable this business to develop. By building such a station, by accepting some of the front-end risk associated with private ventures in space, NASA would encourage materials processing, as it did the communications industry years ago. Micro-gravity is an intriguing new environment that should be exploited.

Provide Focus and Continuity for the Civilian Space Program

The team that created the Space Shuttle represents a unique national resource. It alone can develop large, highly sophisticated manned space flight systems. If the United States is to retain this capability, now that the development program of the Space Shuttle is nearly complete, the team must be given a new job.

The job must not only drive the frontiers of technology, it must also be appropriate to America's greatness. Gemini, Apollo, Skylab and Shuttle were large enterprises, notable for their boldness as well as their successes. For two decades, they gave meaning and focus to the nation's civilian space program. A space station would continue this tradition.

Develop Capability to Operate Routinely in Space

The Space Shuttle provides routine access to low Earth orbit. As a transportation system, the Shuttle is an effective and unique tool. It can deploy, checkout, repair and retrieve spacecraft. But its stay time in orbit is limited. Nominally seven days, the Shuttle's capacity to remain in orbit can be extended to up to thirty days. However, with a fleet of four orbiters, employing the vehicle in this fashion would impinge upon the Shuttle's primary role: transporting crews and payloads to and from space. Despite its versatility, the Shuttle is not a system for efficient, continuous operations in space.

Such operations are now important because space has become an environment in which man conducts numerous and varied activities. These activities are simply more effectively accomplished if man's presence is permanent. Just as our research effort in the Antarctic is more effective by there being a permanent presence on the polar icecap, our activities in space can be more effective if we maintain a permanent facility on station in orbit. And as the Antarctic facilities are serviced periodically by supply vessels, the space station would be supplied periodically by the Shuttle.

Enhance National Security

Like the oceans, space is now used to support our national security. Currently, the United States employs spacecraft for a variety of

defense-related missions, including early warning, communications, navigation and surveillance. In dollars, the defense space program exceeds that of NASA's and represents an essential element of our strategic posture.

A space station, tended by the Space Shuttle, would add to the effectiveness of these defense activities. At first, the station could be used to test and demonstrate new space-based systems. These systems would be developed by the Navy and Air Force as well as by the intelligence community. Flown first aboard a NASA space station, they would assure the feasibility and practicality of employing such systems aboard a manned orbiting space station. Later, a space station could be dedicated to such systems and employed in an operational mode.

New capabilities are essential to maintaining the security of the United States in the decade of the 1990's and the first decade of the new century. A manned space station represents such a new capability.

Provide Vehicle for International Cooperation

America no longer has a monopoly in sophisticated space systems. European and other countries now have the technical capabilities and experience to develop advanced satellites and reliable (though expendable) launch vehicles. For example, the French are developing their own remote sensing system. The European Space Agency has

declared the Ariane launch vehicle operational while the Japanese are moving quickly in the field of advanced space-based communications. Foreign capabilities are sufficiently developed so that other countries could play a meaningful role in a United States space station program.

Such international participation would lower the cost to the United States taxpayer of a space station program. It would strengthen the link of foreign space programs to the Shuttle and to United States space systems in general. It would also provide the United States with access to first-rate science and technology.

Provide the Administration with an Initiative in Space

One legacy of John F. Kennedy was the decision to send a man to the Moon and return him safely to Earth. Apollo was a triumphant success, and is now inextricably linked to Kennedy's short-lived presidency. Each President following Kennedy had the opportunity to continue America's exploration of space. Lyndon Johnson at first sustained the Apollo project, cutting back only when Vietnam began to sap first his budgetary resources and then his presidency. Richard Nixon approved Skylab, a scientific expedition of considerable importance and an impressive demonstration of operational capabilities in space. Mr. Nixon also committed the nation, wisely we now know, to a reusable space ship, the Space Shuttle. Jimmy Carter proposed the Space Telescope, a project that will ensure American preeminence in astronomy for decades to come.

President Reagan now faces the same question faced by his predecessors: what to do in space. I am confident that the President, who rightly has placed economic recovery and national defense as the top priorities of his Administration, recognizes the importance of a space station program. I am also confident, that when the time is appropriate, he will approve such a program.